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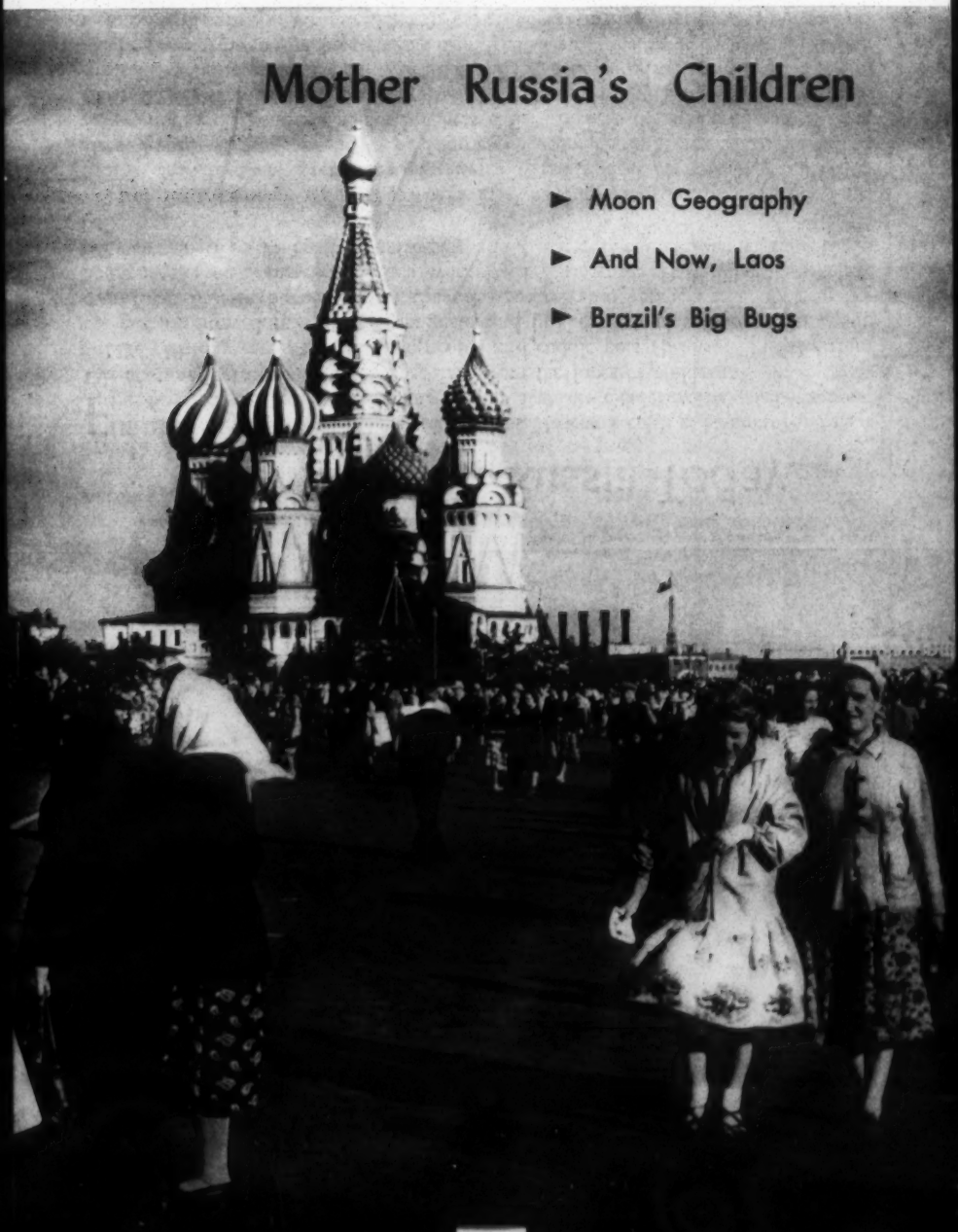

Mother Russia's Children

- Moon Geography
- And Now, Laos
- Brazil's Big Bugs

construction tries to keep up with Moscow's population, now over 5,000,000.

The girls stop at one of the countless ice-cream kiosks that stand open on the capital's street corners even in sub-zero weather. Russians love ice cream.

Approaching a large gray stone building, the girls quicken their steps. Inside, they disappear into their one-room apartments where they live with their parents, brothers and sisters, and perhaps even their grandparents. Although feverish, apartment construction is still too slow to provide comfortable accommodations for all, and flats are jammed to overflowing. (See "A Firsthand Look at the Soviet Union" in the September, 1959 *National Geographic*.)

Several families may share a kitchen and bath, even a doorbell—a group of stalls where a dozen people live may lead off from one doorway, with each stall having its own coded doorbell ring. Still others share just a kitchen and toilet and frequent the public baths.

The girls' mothers are at home now, preparing the evening meal. Nearly all women in the Soviet Union work, not only as secretaries, writers, and artists, and at white collar jobs, but also as stevedores, construction laborers, steam fitters, crane operators, welders, riveters, hod carriers, street cleaners. Three-fourths of Russia's doctors are women.

NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

Because of tremendous World War II casualties, Russian women now outnumber men, and the nation needs the wom-

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ERICH LESSING; COVER PHOTOGRAPH BY BETTY LEWIS

Growing Up in Russia Today

FURRED, SCARVED, and bonneted against Moscow's cold, girls jump rope near the towered wall of the Kremlin, ancient Russian citadel. The somberness of this onetime fortress does not keep gaiety from the faces of children.

Like girls anywhere, they play hopscotch and cuddle pets (below). Puddles from the melting snow draw them like magnets, and in chemistry class they might giggle over their Bunsen burners. But they are serious students, spending four to six hours a day on homework. They work hard against the time when they must pass examinations to enter a university and become doctors, teachers, musicians, ballerinas.

Their little brothers dig in sandboxes in the Gorki Park of Culture and Rest. Middle-sized brothers hitch rides on buses and make faces at policemen but have already read—in English—books by Charles Dickens, Mark Twain, Harriet Beecher Stowe, and Jack London. Older brothers collect records of American songs, from Glenn Miller's "Moonlight Serenade" to Elvis Presley's "Jailhouse Rock," but also can take an automobile engine apart and put it back together again.

The game of jump rope breaks up. The girls start for home, swinging through streets teeming with walkers: Army officers in colorful uniforms, drably dressed workers on their way home, exotic visitors from some of the nation's 15 republics—Uzbeks, Tadzhiks, Turkomans—perhaps a delegation from Asia's Mongolian Republic or Red China. In Red Square they walk by St. Basil's Cathedral (cover).

They pass seas of mammoth apartment houses like those around the Ministry of Foreign Affairs (below), where wooden houses and log cabins once stood. Vainly,

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NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

SIBERIAN HUCK FINNS enjoy an after-school moment of idleness, above, in Sverdlovsk, where log houses contrast with booming industry. Below, a group of Young Pioneers marches in front of its headquarters, the Palace of Pioneers, also in Sverdlovsk. This organization combines Scouting, state baby-sitting, and Communist indoctrination.

they enter a university if they pass their examinations. While studying, the government pays them—the amount based on their grades—for living expenses.

Schools consume a large portion of a Russian child's life. His mother, given time off for his birth, returns to her job about three months after the child is born. Nursery schools care for the infants until kindergarten, at 3, readies them for grade school, at 7.

But all work does not make them dull children. They belong to the Young Pioneers—ages 9 to 14—an organization corresponding roughly with American Girl and Boy Scouts. Summers are spent in camps in the country where members study nature, sing around campfires, play games, and get political indoctrination. At 15, they go on to the Communist Youth League (Komsomols) which also maintains summer camps. Many young people also leave for the east, spending their holidays helping with the harvest in those once undeveloped lands.

These are the faces of the Soviet future: sometimes serious, sometimes gay, sometimes dedicated—not really so different from young faces everywhere. L.B.

FRANC SHOR, NATIONAL GEOGRAPHIC STAFF

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ERICH LESSING

en's hands. Also, Russian prices are high, and the families need the extra income. The government hopes to eliminate the need for women to do manual labor.

After dinner someone turns on the television set. Tonight's offering is "Sleeping Beauty" danced by the Bolshoi Ballet. Just as in the early days of American television, neighbors without sets drop in to watch the show.

Except on Sunday, daytime television is unknown. Since nearly everyone works, there is no audience. The Moscow station broadcasts four hours a day, offering serious theater, operas, music, movies, news, educational and children's programs.

Everyone waits excitedly for Sunday, the one weekly holiday. Shops (open Sunday to accommodate workers, closed Monday) bustle with crowds of buyers. GUM, owned by the government and one of the biggest stores in the world, offers everything from coats to hairpins—anything made in Russia, short of a car. Cameras, radios, television sets, kitchenware, clothing, and costume jewelry are displayed on the Moscow store's counters.

Children tug on their mother's hands. The tug says "hurry, it is nearly time for the puppet show to begin." From September to June, puppet theaters give performances, and every week end children's ballets, operas, concerts, and a children's theater draw Moscow youngsters. And a circus is always playing.

Sunday evening brings thoughts of school on Monday to millions of children all over this remarkably vast land. From Kaliningrad to the Bering Strait, boys with close-cropped hair and girls with pigtails begin another school week. They have classes six days a week, some nine to ten months a year, for a minimum of seven years in the country, ten years in towns.

Both boys and girls concentrate on science and technology. Above, sixth-grade girls study geometry in Tbilisi. Science courses begin early and continue a long time. Four years of chemistry, five of physics, and six of biology are minimum requirements. Mathematics courses span all ten years. Added to these are courses in Russian language and literature, a foreign language (most choose English), history, geography, art, music.

While girls learn to sew, boys learn shop, from metalworking to simple electronics. In ninth grade they learn to take apart and put together car engines.

At the end of these intensive courses,

PHOTOGRAPH BY DAVID S. BOYER OF A MURAL IN THE CHARLES HAYDEN PLANETARIUM, BOSTON

PEERING INTO the depths of a moon crater painting, these youngsters walk in imagination with the first lunar explorers.

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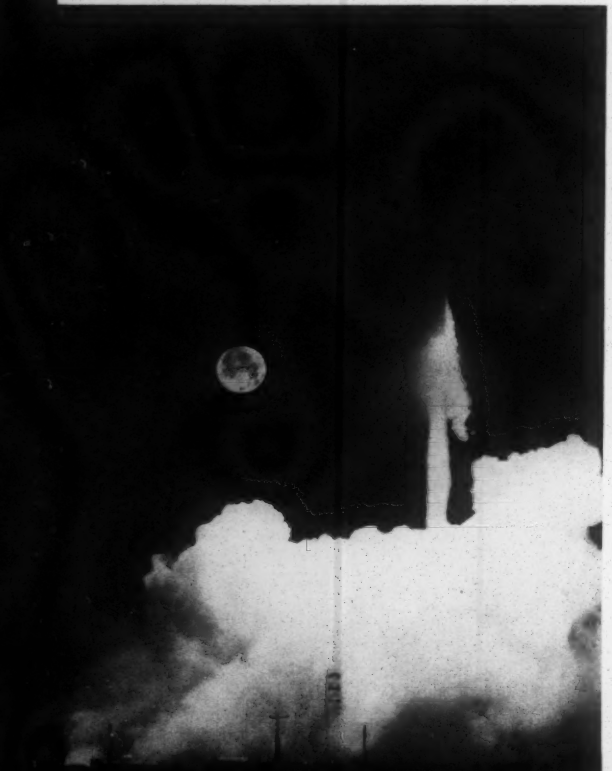
WHAT YOU'LL FIND ON THE MOON



LUIS MARDEN, NATIONAL GEOGRAPHIC STAFF

EVERY DAY the moment comes closer. Rockets pounding upward, such as the American lunar probe *Pioneer IV,* left, and the Russian shot which apparently struck the moon itself, clearly herald the day when some human being will step onto the moon.

No one knows when it will be. No one knows who will do it. It could be you. If it is, what will you find?

A stark, silent world, pocked with craters and dotted with mountains (right), without air or water, where it is always too hot or too cold.

As you leave your space ship, you'll get your first surprise. Instead of a couple of feet, your first step will carry you about 15. To feel "normal" in weight, you'll have to wear shoes weighing 300 pounds.

The moon has only one-sixth the gravity of the earth. A high jumper who can clear six feet on your school playground could sail 21 feet on the moon.

The first time you plant your space boot on the moon, you may be in for an unpleasant surprise—a lunar hotfoot. If sunlight is striking the spot you land on, the surface will be about 214 degrees Fahrenheit—two degrees hotter than boiling water.

If it is night on the moon, the temperature will have plummeted to –243 degrees F., 134 degrees colder than dry ice.

You'll find the surface of the moon dusty—but no one can be sure how dusty until you arrive there. Some astronomers believe the moon dust may be two-thirds of a mile deep. Others think it no thicker than dust on an uncleaned table.

Whatever the depth, many scientists are convinced the dust is chemically active. Some think it has been made unstable by cosmic rays and other radioactive bombardments. This factor could add greatly to the effect of the "lunar hotfoot."

As you explore the crags and craters, you'll have to get along without many of the things you are used to on earth. There is no air—so your moon suit will have to reproduce a bit of the earth's atmosphere so you can live. If you have companions, you'll be unable to shout your discoveries to them—without air there will be nothing to carry the sound waves of your voice.

If the moon is so stark, uncomfortable, dusty, and barren, why bother to go there? There are many scientific reasons, some military and even commercial advantages to be gained, but perhaps the overriding incentive is simply that the moon trip will be the greatest voyage of discovery in history. F.S.

with animism. Every Lao male is expected to shave his head and wear the saffron robes of the Buddhist monk for at least a few weeks of his life. Yet Lao also worship the spirits of the earth, the sky, the water. They put rice offerings to the gods of family and home, in bright-colored, birdhouselike shrines in their gardens. When the river is low, they offer rice to the water spirits and fly prayer flags on the sand flats.

Lao show little drive for getting ahead in the world. There is poverty in Laos, but no hunger. Rice from seasonally flooded paddies and fish from the streams, together with a few chickens and fruits, are enough.

About two-thirds of the country's 3,000,000 people are Lao, related to the Thai of Thailand and the Shan of Burma. The rest are mainly primitive tribesmen and immigrants from southern China.

Laos is small. It covers some 91,000 square miles—about as much space as the State of Oregon. As Asian nations go, it is not densely populated. It holds only about 30 persons per square mile—compared to Formosa's more than 700 per square mile.

Why, then, does the current crisis in Laos—small, uncrowded, and one of the least developed countries in Southeast Asia—catapult the nation into world headlines?

Geography gives the kingdom its importance (see map). It pushes fingerlike south from Communist China past Red North Viet Nam and non-Communist South Viet Nam, to Thailand and Cambodia. If Laos falls to the Communists, it leaves these three non-Communist countries exposed to Red attack. Malaya, Singapore, and Burma are similarly threatened.

With an eye on the future of this key nation, United States aid has poured in since 1955. Laos has no railroads and few passable highways. Most transportation is by river and air. But brotherly aid has added 500 miles of road and built schools. Dollars have also brought equipment to increase production in tin mines and construct new dams and powerhouses. A public health program contends with yaws and malaria, and irrigation systems improve crops. L.B.

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RIVERS SERVE as highways in Laos. Here betel nuts are delivered by dugout canoe.

BLACK STAR

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W. ROBERT MOORE, NATIONAL GEOGRAPHIC STAFF

LAOS

Trouble Stirs a Contented People

Korea.
Viet Nam.
And now Laos.

Communist troops slip across the 1,000-mile border this drowsy Indochinese kingdom shares with Communist North Viet Nam and Red China, and join with Laotian Communist bands. Lao forts fall to the invaders. The alarm sounds around the world.

The Lao soldier above stands a weary guard against attack. Small arms and supplies from American bases in Japan arrive by the planeload. A United Nations subcommittee arrives in the strife-torn land to investigate Lao charges of aggression by North Viet Nam Reds. Another Asian crisis is in full bloom.

Yet Laos—rhymes with *how*—seems the most unlikely place for a crisis to thrive. Its life is slow, sleepy, and primitive. It has no lawyers, no chemists, few agricultural scientists, few engineers, and one general. Its military is entirely maintained by France and the United States. France owned Laos until 1949 when the small Asian country became independent within the French Union.

Wandering water buffaloes and creaking high-wheeled oxcarts clutter the road to Vientiane, Laotian capital. The city, with 120,000 people, has no water system, no sewers, and no garbage collection. Pedicabs, plus a few automobiles, compete for space with chickens, black pigs, and stray dogs roaming the streets.

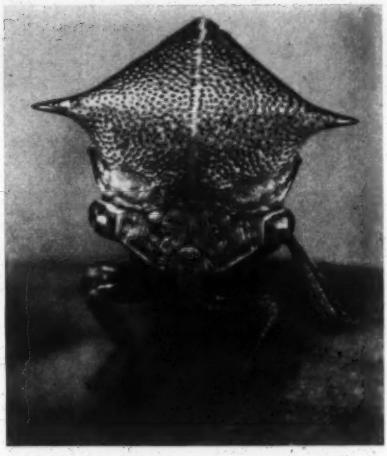
Curly-roofed pagodas rise everywhere. A few two-story buildings line one of the three main streets in the center of town. Most houses are built of wood, thatch, and bamboo, set off the ground on high stilts.

Lao throughout the country live in these light, airy houses. Usually there is a granary in back, and a mortar and pestle underneath where a woman hulls rice. Near by stands a loom where the wife weaves scarves and, of course, her sarongs.

Laotians are gentle and courteous. They seldom get in trouble. Vientiane's prison serves for the entire land. The jail can accommodate 800 inmates, but may actually house fewer than 20 at one time.

The people are whimsical and love parties where they wear garlands of flowers and colored paper, beat drums, and sip sweet rice wine. Youths and maidens sing songs, improvise poems, tell jokes, and flirt. Even funerals are gay.

They are soft-spoken and peaceful, devoutly, yet cheerfully, religious. Their religion is Buddhism, tinged



MONSTERS OF THE AMAZON: Bizarre bugs captured by Dr. Zahl in the jungle include the wide-eyed tree hopper at left, with sharp spikes jutting from a bulging forehead (two-and-a-half times life size). This insect lives on plant sap. There are some 2,500 species, each with a different and strange-shaped shell.

A solemn look, as of a judge on the bench, distinguishes the judicial grasshopper (below). Gleaming eyes stare out from halfway up its elongated cranium. The knifelike antennae explore flower clusters in search of food. The 'hopper is shown seven times life size.

A MOTTLED WHITE MOTH with a wingspan of 12 inches was captured in the Territory of Amapá beneath the floodlights of a manganese mine. It is held by 10-year-old Antonio, who accompanied Dr. Zahl on several field trips. In the background are heavy-fruited papaya trees.

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Amazon Beetle Hunt

CAMERA COCKED, National Geographic Naturalist Paul A. Zahl waits for a huge Amazon beetle to crawl into range.

Dr. Zahl, on an expedition to catch and photograph the mammoth insects of the forest, uncovered this beast—the size of a man's hand—near the Brazilian town of Serra do Navio. It was a good catch, but not the ultimate goal of his trip. He searched for even bigger six-footed game—one of the largest beetles in the world. Its Latin name is *Titanus giganteus*, meaning "giant titan," or simply "big big." Less than 20 specimens were known when Dr. Zahl set out on his quest.

Far up the mighty Amazon River, at Manaus (see GSB March 16, 1959), Dr. Zahl spent a night under the floodlights of an oil refinery. Among the thousands of insects that orbited around the glare, he captured a beetle four inches long, with pincers that could slash a man's fingers to the bone, and taloned feet that ripped his insect net. Dropping it in a gallon can, Dr. Zahl went happily to sleep—to awaken the next morning disappointed. His bug was Titan's little cousin. As he glumly examined his catch, he was called to the refinery. There, under a wastebasket on which was sitting a determined engineer, Dr. Zahl found his prize. F.S.

PHOTOGRAPHS BY PAUL A. ZAHL, NATIONAL GEOGRAPHIC STAFF

NEARLY FIVE inches long, the black Titan of Brazil (left) snaps a matchstick with one twist of its powerful pincers. Dr. Zahl learned to handle the insect by the back to avoid being slashed. In his stateroom on an Amazon steamer, where this close-up was taken, the naturalist even walked his new pet on a string, like a dog on a leash. The many-faceted eyes permit extreme wide-angled vision. Long legs have pads near the ends that act as snowshoes on soft jungle moss. Sharp hooks help in tree climbing.

PAUL A. ZAHL,
NATIONAL GEOGRAPHIC STAFF

COVERING A COPY of the *National Geographic*, a Titan beetle and a larva thought to be of the same species show their size. Dr. Zahl's full, fascinating report on the Amazon's insect life first appeared in the May, 1959, *National Geographic*—the colorful magazine prized by teachers for its authoritative science articles.

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